CLAIM AMENDMENTS

Claims 1, 5, 6, 9, 11, 12, 16, 18 and 20-22 are being amended, claims 4 and 15 are being canceled, and claims 23-25 are being added. All pending claims are reproduced below, including those that remain unchanged.

1. (Currently Amended): For use in a system including a power supply that provides a supply voltage to a laser driver, and a laser diode that receives a drive current from the laser driver, a method for reducing power consumption, comprising:

(a) monitoring a voltage drop across the laser diode; and

(b) adjusting the supply voltage, based at least in part on the monitored voltage drop across the laser diode, wherein said adjusting includes increasing the supply voltage when the monitored voltage drop across the laser diode increases, and decreasing the supply voltage when the monitored voltage drop across the laser diode decreases.

2. (Original): The method of claim 1, wherein step (a) includes using a high impedance filter to produce a feedback path that enables the monitoring of the voltage drop across the laser diode.

3. (Original): The method of claim 1, wherein step (a) includes sampling the voltage drop across the laser diode.

4. (Canceled):

5. (Currently Amended): ~~The method of claim 1, wherein step (b) includes~~: For use in a system including a power supply that provides a supply voltage to a laser driver, and a laser diode that receives a drive current from the laser driver, a method for reducing power consumption, comprising:

(a) monitoring a voltage drop across the laser diode;

~~(b.1)~~ (b) determining a desired supply voltage, based on at least both the monitored voltage drop across the laser diode and a laser driver headroom voltage, the laser driver headroom voltage being at least a minimal additional voltage necessary to operate the laser driver; and

~~(b.2)~~ (c) adjusting the supply voltage to generally track the desired supply voltage.

6. (Currently Amended): The method of claim 5, wherein the desired supply voltage, determined at step ~~(b.1)~~ (b), is substantially equal to the monitored voltage drop plus the laser driver headroom voltage.

7. (Original): The method of claim 6, wherein the laser driver headroom voltage is treated as a constant.

8. (Original): The method of claim 6, wherein the laser driver headroom voltage varies.

9. (Currently Amended): The method of claim 6, wherein step ~~(b.1)~~(b) includes:

determining a peak monitored voltage drop across the laser diode over a period of time; and

determining the desired supply voltage by adding the peak monitored voltage drop to the laser driver headroom voltage.

10. (Original): A laser driver adapted to drive a laser diode, comprising:

a sampler to sample a voltage drop across the laser diode; and

a controller to determine desired supply voltage information based on at least both a laser driver headroom voltage and voltage samples produced by the sampler;

wherein the controller also provides the desired supply voltage information to either a power supply that produces an actual supply voltage used to power the laser driver, or to a further controller associated with the power supply.

11. (Currently Amended): A system, comprising:

a laser driver adapted to drive a laser diode;

a sampler to sample a voltage drop across the laser diode; and

a controller to adjust a supply voltage, used to power the laser driver, based at least in part on voltage drop samples produced by the sampler, wherein the controller increases the supply voltage when the voltage drop samples are indicative of an increase in the voltage drop across the laser diode, and the controller decreases the supply voltage when the voltage drop samples are indicative of a decrease in the voltage drop across the laser diode.

12. (Currently Amended): A system, comprising:

a laser driver adapted to drive a laser diode;

a sampler to sample a voltage drop across the laser diode; and

a controller to adjust a supply voltage, used to power the laser driver, based on at least both a laser driver headroom voltage and voltage drop samples produced by the sampler, to substantially minimize the amount of power consumed by the laser driver and the laser diode.

13. (Original): The system of claim 12, wherein the laser driver headroom voltage comprises a predetermined estimate.

14. (Original): The system of claim 12, wherein the laser driver headroom voltage is adjusted in real time.

15. (Canceled):

16. (Currently Amended): ~~The system of claim 15,~~ A system, comprising:

a laser driver adapted to drive a laser diode;

means for monitoring a voltage drop across the laser diode; and

means for adjusting a supply voltage, used to power the laser driver, based at least in part on the monitored voltage drop across the laser diode;

further comprising a means for monitoring a laser driver headroom voltage.

17. (Original): The system of claim 16, wherein the means for adjusting adjusts the supply voltage based on at least both the monitored voltage drop and the monitored laser driver headroom voltage.

18. (Currently Amended): A system, comprising:

a laser driver adapted to drive a laser diode; and

a controller to monitor a voltage drop across the laser diode and to determine a desired supply voltage based at least in part on the monitored voltage drop;

wherein the controller also adjusts a supply voltage, which powers the laser driver, to track the desired supply voltage ~~based at least in part on the monitored voltage drop across the laser diode~~.

19. (Original): The system of claim 18, further comprising a high impedance filter connected between the laser diode and the controller, to provide a feedback path that enables the controller to monitor the voltage drop across the laser diode.

20. (Currently Amended): The system of claim 18, wherein the controller also ~~adjusts~~ determines the desired supply voltage based at least in part on a laser driver headroom voltage, which is at least a minimal additional voltage necessary to operate the laser driver.

21. (Currently Amended): The system of claim ~~19~~20, wherein the laser driver headroom voltage is treated as a constant.

22. (Currently Amended): The system of claim ~~19~~20, wherein the laser driver headroom voltage varies.

23. (New): For use in a system including a power supply that provides a supply voltage to a laser driver, and a laser diode that receives a drive current from the laser driver, a method for reducing power consumption, comprising:

(a) monitoring a voltage drop across the laser diode;

(b) determining a desired supply voltage to be provided to the laser driver, based on at least in part on the monitored voltage drop across the laser diode; and

(c) adjusting the supply voltage to generally track the desired supply voltage.

24. (New): The method of claim 23, wherein step (b) includes:

determining a peak monitored voltage drop across the laser diode; and

determining the desired supply voltage by adding the peak monitored voltage drop to a laser driver headroom voltage.

25. (New): The system of claim 10, wherein the controller determines a peak monitored voltage drop across the laser diode over a period of time, and determines the desired supply voltage by adding the peak monitored voltage drop to the laser driver headroom voltage.